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HEALTH

FOUNDED BY THE LATE Dr. U. RAMA RAU

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Contents

Khesari Dhall is Poisonous —*Editorial*

Woman's Greatest Challenge
Obesity in Women
Grand Parents
Rh Factor
New Foods for the Baby
Mystery Organs
Plants that Save Lives
Management of Premature Babies
The Problem of Mental Illness

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What's New in the News ?

Atomic Battery in Your Wrist Watch

The first widely practical atomic battery is now being produced. Little bigger than a waistcoat button, its initial use will be in hearing-aids and portable radios.

Another use already planned is in atomic watches. The basic material of which the battery is made is a product of atomic energy known as prometheum 147—a waste by-product from nuclear reactors.

The battery will produce electrical energy for an almost limitless period of time, and there will be a usable amount of energy for at least five years. It will be perfectly safe to carry around, and the makers claim that it "gives off less radiation than radium dials on regular wrist watches". (Ordinary luminous figures glow in the dark because they are giving off radiation).

At the moment prometheum 147 is very expensive (about 500 dollars a curie), but with the completion of new production facilities now in the course of construction, the price is likely to drop to a thousandth of that figure (50 cents a curie, *i.e.*, a measurement of radio-activity).

At that price two dollars' worth (about 14s.) would run a wrist watch accurately for five years.

Measles—Prophylactic

Until a few years ago, little progress had been made in studying measles. The only animal susceptible to the disease, besides man, was that always difficult subject for research, the monkey ; the virus could not be persuaded to grow reliably in chick embryos (a favourite medium for growing virus in pre-tissue-culture days). Then, in 1954, Dr. Enders established the measles virus in cultures of human tissues.

For varied reasons, viruses grown in human tissue are not suitable for vaccine-making, but they can be studied in the laboratory.

The outcome was announced by Dr. Enders a few months ago. Measles virus has now been adapted to monkey tissue and chick embryos—both highly suitable for vaccine manufacture. Experimental lots of measles vaccine will soon be ready for trial.

Ventilation for Shoes

Keeping shoes ventilated is a perennial problem for walkers, for those who have to stand for a long time, and in wet weather. From Norway there now comes a new air-pumping sole (obtainable in men's, women's and children's sizes) made from ethylene—a flexible, colour-proof, and washable synthetic. Fitted into your shoe, its construction gives your foot a cushion of air, thus keeping the feet cool in summer and warm in winter. —(*World Digest*, August 1957).

Natural Oils

It has been proved that excessive accumulation of cholesterol in the blood causes heart disease. Substitution of such natural oils as olive and vegetable oils for animal fats, provide an effective remedy. Experiments on medical students carried out in Ontario, Canada, by Drs. J. Beveridge, W. Connel, and G. Mayer, showed that diets high in butter, beef fat, and lard, caused excessive cholesterol deposits. As would be expected, abstinence from fats decreased the cholesterol, yet the addition of vegetable oils actually caused a further decrease.

Detecting Lung Disease

An instrument, claimed to be the world's first to use radioactivity for the detection and tracing of lung disease, was shown for the first time at a recent international chest surgeons' congress in Cologne.

The instrument, known as an Isotope—Thoraxograph, pumps radioactive xenon gas 133 into the patient's lungs and follows its course through all their tiny paths by means of 16 ultra-sensitive Geiger counters.

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By

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KHESARI DHALL IS POISONOUS

(A Timely Warning Against Its Use)

THE Government of the Madras State has issued a press note warning people against the use of *Khesari* dhall as its use causes constipation, colic and other digestive disorders. There appears to be strong evidence that its continued use produces paralysis.

This particular variety of dhall is obtained from an annual herb botanically known as "*Lathyrus sativus*" cultivated all over India particularly on alluvial soils in Sind, Uttar Pradesh and Madhya Pradesh of the Northern States. It is similar to Red gram (*Thuvarai*) and is grown as a cold weather crop on lands which will raise no other kind of pulse. This pea is cultivated principally as a fodder, but being very cheap and easily grown, it is considerably used as food by the poor classes. *Khesari* dhall is also used to adulterate red gram dhall (*Thuvarai*) from which it can scarcely be distinguished. However, *Khesari* dhall can be differentiated from red gram dhall (*Thuvarai*) by its pinkish yellow colour and wedge-shape with angled sides.

[*Note*:—The local Vernacular names of the two dhalls are given at the end of this article for the benefit of readers in different States].

"*Khesari* dhall is highly injurious to health and the public are warned against the consumption of the same either in its pure form or mixed with red gram dhall," says the Press-note.

Dr. Irwing conducted some crucial experiments on the poisonous properties of *Khesari* dhall and his results proved that ill-effects were more apt to

occur in the rainy season and the great majority of the sufferers were males; that the sad effects of consuming this pulse food manifest themselves in the younger section of the population from the age of thirty downwards. The victims are deprived of the use of their limbs below the waist by sudden paralytic strokes, and normally it is impossible to recover the use of such affected limbs. This condition has been known as "*Lathyrism*".

The cause of the poisonous action of this pulse is attributed to a volatile alkaloid and a large percentage of albuminous material present in the grains.

This pulse is stated to be equally harmful to cattle. Animals fed on this pulse, lose the use of their limbs, due to paralysis.

"It is quite evident that the cultivation and use of *Khesari* dhall is definitely injurious to public health and as such the cultivators of this State will do well to stop its cultivation completely. The grocery merchants have got a national responsibility in not selling this dhall either in its pure form or adulterated with red gram dhall and thus doing a great service to public health" warns the Press note.

This appeal by the Madras State Government to the cultivators and grocers, is indeed an urgent one and likely to receive support from users, and so it is certainly good as far as it goes; but the responsibility of the Governments of this as well as of the other States in this regard is much greater. Without relying too much on the good sense of the cultivators, grocers and consumers, the State Governments themselves should sternly prohibit both the cultivation and the sale of this noxious foodstuff. Not all people who go to the bazaar or send a servant to the grocer for dhall have the time, patience or knowledge to sift the good dhall from the poisonous *Khesari* variety which, being cheap, is often used to adulterate it.

It is therefore, incumbent on the State Health authorities to ensure that this variety of dhall is not offered for sale at all. The penal provisions of the law must speedily and effectively be pressed into service. *Dhall* is such a common constituent of our food, and is in fact the only protein-bearing food which the majority of people in the land use very largely almost every day, that there should be no delay in taking necessary steps to prohibit the use of this poisonous variety.

Redgram dhall: *Cajanus indicus* (Nat. order *Papilionacae*). *Sanskrit*: Adhaki, Tuvari. *English*: Pigeon pea, Congo pea. *Hindi*: Arhar dhal, Tor. *Punjabi and Bengali*: Arhar. *Gujrati*: Tuver, Dangri. *Mahr*: Tur. *Kon*: Tori. *Telugu*: Kandulu. *Tamil*: Thuvarai. *Malayalam*: Tuvara, Catjan. *Kanarese*: Togari.

Khesari dhall: *Lathyrus sativus* (Nat. order *Papilionacae*). *Sanskrit*: Triputa. *English*: Chickling vetch. *Hindi*: Khesari. *Uttar Pradesh*: Latri. *Bengali*: Teora. *Assam*: Kalamaha. *Mahr*: Lakh. *Gujrati*: Lang. *Sind*: Mattar. *Konkan*: Lang. *Telugu*: Lamka. *Persian*: Masang. *Arabic*: Hebul bakar, Khalagi. *French*: Masaing.—(From *Nadkarni's Mat. Med.*, 1954).

2 4 SEP 1957

WOMAN'S GREATEST CHALLENGE

THE ACT OF LOVE

It is the woman who determines whether love-making will enrich her life or blight it.

Dr. MARION HILLIARD,
M.D., F.R.C.O.G. (Lond.),
Chief of Obstetrics and Gynaecology, Women's College Hospital, Toronto

When I was a younger doctor I believed that all my bride patients need for a successful marriage was to be told a few facts about their physical composition and be given a brief, clinical description of the sex act and the male need. I now appreciate that the happiness of women in love-making has a much more tenuous (subtle, slender and refined) basis than any textbook can express. Women are born with more sensitivity and intuition than men. These extra senses must be cultivated and nourished in order to enrich love-making; without them the act of love can be a barren experience for a woman.

Love-making is woman's greatest hazard. If she overcomes the difficulties her life will be radiant; if she fails the misery is enduring. I often recall two women who came into my clinic on an afternoon many years ago. The first of these patients wore pink and her face had a dazzling lustre. She had been married three months and it had been an ecstatic union. The other woman had also been married about three months but she wore grey from head to foot and her face and voice matched her clothes. "Why didn't someone tell me that getting married was so horrible?" she wailed.

How had the first bride achieved so much happiness and the second so little?

To begin with, the first girl had a sense of humour. Solemnity has no place in a marriage bed and the unskilled, honeymoon stage of love-making requires a sense of the ridiculous more than any subsequent period. Many males in the early nervous days of marriage are unsatisfactory lovers. When this happens the bride has her husband's self-esteem at her mercy. She can at the time build an edifice of humiliation—or she and her husband can understand, be amused and go on to build a marriage.

The other important difference between my two contrasting brides is that the happy one had an affectionate, giving nature. She went into marriage gaily, ready to praise the smallest talent, appreciate the sligthest show of thoughtfulness and acknowledge her husband's pride in his masculinity. Her husband rewarded her as she deserved, loving her with zest and tenderness born out of his confidence.

The second bride was uncomfortable about displaying affection. She was afraid of sex: she regarded love-making as a surrender to a violation; there was no giving in her interpretation of love-making.

A woman afraid of sex tends to avoid seeking help. She believes in the myth that people in love marry and automatically live happily ever after. If she should bring herself to confide her uncertainties to her fiancee she will get no help. Men believe in their ability to master any situation that terrifies a woman, from setting mousetraps to launching a marriage. "Don't worry," he murmurs. "I'll take care of you."

He means well but he is incapable of overcoming the basic difficulty: *his bride is not prepared to give*. On her honeymoon she is hurt and outraged, casting herself in the role of sacrificial virgin and him in the role of an uncouth rapist. Later she comes to her doctor and whines that marriage is a misery.

Another woman may be ardent during premarital embraces and cold during the marriage act. "But she looked so alluring!" a husband once complained to me of his wife. The difficulty was that the young woman was convinced that love is a series of caresses, requiring nothing more of her than a shiver of delight. She was unprepared for the giving needed in the act of love.

Sex attraction between man and woman is a happy thing: exhilarating, gay and unspeakably sweet, once it has been learnt. But it is an activity which needs experience and practice, like any activity of the mind and body. Absurd and unforeseen things will happen, especially in the early years. The timing of the climaxes can take five years to perfect, during which time the wife must be prepared to comfort her chagrined husband.

"It isn't going to work the way you expect it," I warn the brides who come to me for advice. "*Just relax and enjoy yourself. Don't be self-conscious.*"

A woman's reaction to sex has few points of resemblance to a man's. For one thing, her climax varies from one so slight that it is a sigh, to one so profound and deep that it results in an agonizing cry. A man's emotion varies but his physical climaxes are identical. Millions of women feel nothing at all; others are so moved that there is a small death within them, and they weep. The same woman can experience the whole galaxy of climaxes, depending on her mood. The male enjoyment of sex requires no mood except the basic desire.

A woman desperately needs an atmosphere of loveliness and tenderness or she is incapable of genuine response. But the creation of atmosphere is not enough. She can stage her love-making with candles, music and perfume, decide on the moment to permit it to happen, set the mood—whether abandoned or gentle. Then in the end she must have the wit to dissolve. *Women show their finest control of sex in their most complete surrender.*

A man can feel kinship with the gods if his wife can make him believe he can cause a flowering within her. If she doesn't feel it she must bend every effort to pretend. This is the worthiest duplicity on earth;

I heartily recommend it to discontented wives. It gives a man his manhood, a quality of glorious robustness that cannot fail to reward the giver. Thousands of women who have begun this sort of benign sham have discovered that their pretended delight rapidly became real.

Another area of difference between men and women is distraction. Not much, short of ridicule or a gun pointed at him, can distract a man during the act of love. There is little that won't distract a woman and rob her of her joy—voices, a child crying, a telephone ringing—and the spell is broken.

A patient came to me one day with a problem. Her father-in-law, it appeared, lived with them and it was his habit to read at night until 2 a.m. "Besides," she added, "that catch on our bedroom door doesn't work properly. It keeps opening." She had become so inhibited that she was shipped spiritually and emotionally.

"On your way home," I advised her, "buy a bolt."

A few months later when she came to me about her first baby she was radiant. "That bolt has made all the difference," she said. "I feel safe and life has been much better."

Another adverse influence on women in love-making is weariness. A woman suffering from fatigue has a tendency to put off the act of love in the expectation that she will feel more like it later. This is a fallacy. A woman who puts off love-making feels less and less inclined.

One patient who was married to a clergyman came to me sheepishly with another problem. She and her husband slept together once a week, on Sunday nights. It left her exhausted next morning, when she had to face the weekly wash-day.

"I've tried to persuade him that this is difficult for me," she complained, "but it's no use. Is there something I could do about it?"

"Certainly," I said. "Do the washing on Tuesdays."

Some marriages have no time for love. The couple is busy with small children and parties and building a business career; weeks go by without a union. This is a dangerous situation.

A happy bedroom is the core of a marriage, a place where husband and wife can withdraw from the pressure of financial worries and fretting over the children's behaviour, and find in each other a source of strength that stems from their mutual confidence. This oasis gives a man the assurance that he is vigorous and skilful and the woman the knowledge that she is needed and prized.

Women should also be prepared for another poorly understood facet of love-making: the climax in some cases is followed by a sense of despair, a moment of bleakness when both parties feel deserted. This can be disturbing but actually it is completely normal. The antidote is the comfort of an embrace, rather than the usual turning away.

Marriage is more than a living

together until death do you part. I believe the marriage ceremony commits all women to understand the physical and emotional needs of their husbands. In the giving of their thoughtfulness, tenderness and responsiveness they can live all their lives in a golden glow. They will be needed and cherished. Few women would ask for more. —(Condensed from "*A Woman Doctor Looks at Love and Life,*" via *Reader's Digest,* July 1957)

OBESITY IN WOMEN

HECHT describes some of the psychological factors operating to produce obesity in women, presenting data obtained in interviews with thirteen patients and presenting in detail the case of an obese patient hospitalized for intensive psychotherapy for her condition.

For these patients food is an object to which conflicts not normally related are attached. Primarily, food is the object thro' which a pathologically strong *oral libido* is partially gratified in an unsublimated way. Also, food, particularly fattening food, is regarded as part-objects, such as breast which the patient wishes to possess; it may also be fantasied as an impregnating agent. Ambivalently regarded whole objects may also be symbolized as food, and introjected through eating.

Thus the processes of eating represents both the expression of oral eroticism, sadistic or sexualized attempts to obtain part-objects, and a source of narcissistic supply in the introjection of whole objects. The tremendous guilt felt after eating is derived from the obese patient's unconscious appreciation of the meaning of the act. Periodic abstinence and a rigorous attempt to diet, represent the ego's attempt to prevent these crimes and to expiate for past crimes. However, the overwhelming need for gratification leads to renewed gorging.

The obese woman is prevented from losing weight also by the anxiety produced by diminution in body-size. She wishes to show to the world that she possesses, on her fat abdomen, those objects that she and others hold in high esteem. This explains why many women stop dieting as soon as they are told that they have lost weight. The feeling towards the obese body is actually an ambivalent one, including shame and disgust at its unattractiveness and repulsion at the deeds that created it, and unconscious pride in its size. Obesity is overdetermined and may be used to defend against threatening unconscious feminine or masculine wishes. The superabundant body-fat and curves of obesity, as an exaggeration of normal femininity, can be an attempt to deny masculinity. However, since the obese body is unattractive to men, it may serve as a defence against the dangers of being feminine or may gratify homosexual fantasies!—(*Psychiatric Quarterly 29 :* April 1957).

GRANDPARENTS

TODAY grandmothers and grandfathers play a *different role* in family life to what they once did in the *joint-family* scheme. A "brood" of grandchildren is no loner common. Today's grandparents may have had two children who, in turn, have two children (though parents today are having larger families) and live far away. Many grandparents are known to their grandchildren primarily through letters, holiday gifts, and visits once or twice a year. To a large extent, they are deprived of their traditional joys and opportunities to serve the family.

The children are deprived too. Those grandparents who do live with or close to the family have much to offer the youngsters and the family as a whole. The benefits of having someone to help care for the children are obvious to overworked young parents. Youngsters seem drawn to Grandpa's knee in the evening; and when, for one reason or another, there is no father in the home, his role is doubly important, provided he does not take over *all* authority. In many cases Grandmother gives a hand with the housework too. But grandparents furnish something even more fundamental and important. For one thing, the affection they give to the children is of a particular kind, one that is usually less anxious and less concerned with the details of daily living than the parents'.

Youngsters also profit from the sense of *continuity* that comes of having grandparents in their lives. *More than fun,* a feeling for the past and for the *durability of the family,* comes of grandparents' stories about "*when Mother was a little girl...*" or "when Father was a little boy..."

Along with the mutual pleasures and benefits of having grandparents near or in the household, there usually come mutual difficulties. Problems arise and the two adult generations must come squarely to terms. Some of these problems are eternal, some are new. Since the grandfather generally has less to do with the children, grandmother is usually more involved. There is always some degree of friction when two women have authority over the same children, particularly when they are closely related and of two different generations. The new problems arise from the very fact that a grandmother is no longer *expected* to play an active role in the house. Her presence is often treated as a special condition rather than being taken for granted. Furthermore, with so many recent changes in attitudes toward child development, her views are not given as much consideration as they were in days gone by. (Parents who give older people a chance, however, often discover that they have not "stood still," and may be surprised at the similarity of some basic attitudes and at the adaptability of the older people to new views on their own volition or when those views are explained).

Adjustments are not always easy. When mother and daughter live in the same home, the younger woman may feel, "She still thinks I'm a little girl." The older one may often think her daughter is a little girl in many ways and treats her accordingly. When the situation involves daughter and mother-in law, they usually have to face both the traditional rivalry for the husband's affection and the likelihood that they have different ways of doing things. A daughter may or may not carry on her own mother's practices, but at least she is familiar with them. The ways of her mother-in-law may seem completely strange.

In any case, of course, complete agreement is not to be expected. One person cannot expect another to conform entirely. The wise grandmother does not attempt to usurp the mother's authority, and the wise mother does not brush the older woman aside. A prudent man does not argue in front of his grandson that it is certainly time for the boy to have a bicycle. The boy's father, on the other hand, does not laugh off the advice. Parents must also recognize that grandparents who live in the home or are adequate baby-sitters do and should have authority of their own. They are people with ideas of their own, and not there merely to carry out the mother's and father's wishes.

Whether grandparents visit or live with the family if their ideas and ways of doing things are different, it is for the most part up to the parents to interpret them to the children. They should explain that a grandparent's ways are just as good, though they may be different. Where housekeeping is shared, the mother may point out for instance, "Granny makes beds this way. I make them the other way. Both are good." When the grandparents' home is nearby, a youngster might be told, "at Granny's you take a nap on the couch—that's her way. At home you take a nap in your bed—that's our way." Instead of being considered a problem, minor differences offer a good chance to teach young children an important lesson: a c c e p t i n g differences among individuals.

Since people today live so much longer, the likelihood is that grandparents will be present more and more, to fulfil their important roles. On the whole, it is they who are required to make the greater adjustment, to be open to the changing ways of the younger generations. There is no cause for self-consciousness about giving advice when family relationships are good. But being too free with it can easily arouse resentment. When it seems rare, it is likely to be considered more valuable. They must keep in mind that their children are now heads of their own households. In moments of stress they might recall how they felt when that responsibility was theirs, and be less inclined to interfere with their children or children-in-law. It is a warm, happy situation when three generations understand each other and get along well together.—(From *the Encyclopaed ia of Child Care and Guidance*).

PLANTS THAT SAVE LIVES

CHARLES H. COLEMAN

ANTIBIOTICS, digitalis, rauwolfia, and the other miracle medicines are only a drop in the bucket when it comes to reaping the harvest of amazing new medicines that plants are able to produce, scientists are discovering.

Every day brings some new discovery of plant enzymes that heal, substances that stimulate growth, plant extractives with antibiotic properties, and other that repeal disease-carrying insects. New sources of vitamins are being discovered in plants that never before had been suspected of holding rich stores of these essential nutrients.

Take the persimmon tree, for example. This is a tree commonly found in the southern United States and in Japan. It looks a little like a tall apple tree, and bears a plumlike fruit that puckers the mouth when green. Frost turns the fruit a vivid orange colour and develops a delightfully unique flavour. Now, science is discovering that the leaves are also valuable.

According to M. Kitabara and Y. Takeuchi, College of Agriculture, Gifu University, Gifu, Japan, who have been doing research on it, the young leaves are high in vitamin C. Vitamin C helps build strong blood vessels, healthy teeth, and aids in preventing colds.

The ordinary process of tea-making, the scientists say, will preserve the high vitamin C content of the young leaves. Already, interest is developing in the United States of America on the commercial possibilities of marketing persimmon tea. You may see it on the grocery-store shelves any day soon.

A naturally occurring plant enzyme, papain that has healing properties, has been discovered by K. Kæmmerer and L. V. Erichson, University of Bonn, Germany.

Tests which have been run show that this enzyme is useful for treating gastric disturbances in both mankind and animals. The enzyme is administered orally in a gelatin solution.

Infected wounds heal more rapdily when treated with a salve containing this enzyme. Similar results are obtained when using the salve to treat bacterial and protozoal skin infections.

Does garlic repel you? It also repels the ticks that carry encephalitis, the disease that causes inflammation of the brain in mankind. This strange property of garlic has been brought to light in researches conducted by G. Catar, Slovenka University, Bratislava, Czechoslovakia.

Not only are ticks repelled, but thirty-five minutes' exposure to an extract of garlic will kill the germ-carriers. Substances in lemon peel have the same effect. Scientist Catar believes

that common plants such as the lemon and garlic may be useful in preventing encephalitis in humans.

Horseradish, too, is useful for things other than seasoning meats. A. G. Winter and M. Hornbostel, of Cologne, Germany, have discovered a very active volatile substance in horseradish that acts like an antibiotic towards common germs.

It kills them outright or inhibits their growth. It is so active that it appears in the urine within one to three hours after horseradish has been eaten.

Ever try counting the slices of watermelon that you have eaten, and the seeds thrown away? Scientists at the Institute for the Advancement of Pharmacists, Kiev, find that watermelon seeds contain a substance that paralyses tapeworms and roundworms in cats. The substance is present in the fatty oil and other components of the hulls and kernels.

[*Note:*—In India the juice of the bitter gourd (*Karela*) has recently been reported to be useful in treating diabetes.—Ed. HEALTH].

Even growth stimulants are available from common plants. Experiments with the green parts of fir and pine trees and juniper shrubs by K. Brencis, Institute of Animal Technology, Academy of Science, Latvia, S.S.R., shows that these can act as stimulatory vitamin food supplements in the diets of hogs and sheep.

About one-half pound of fresh conifer meal, mixed with the ration fed, can boost the body weight gain of these animals by as much as 20 per cent. Analysis of the conifer meal shows that it is rich in vitamin C and other vitamins.

Mankind and animals are not the only ones that may profit from some of the amazing medicines scientists are finding in common plants. Plants also may be kept free of some of the devastating diseases that attack them.

For example, the juice of sweet peppers has been found to inhibit almost completely the action of every plant virus with which it comes into contact. Identification of the unknown substance and applications in agriculture could mean amazing new health for many important crops, with resulting better yields.

It would seem that plants, in the struggle for the survival of the fittest, would produce substances that would inhibit the growth of other plants. But this is not necessarily so. The discovery of a remarkable property of plants to stimulate the growth of other plants is being brought to light by current experimentation.

Bananas, for example, contain a growth stimulator. Pieces of carrot plant placed in extracts of green bananas by F. C. Steward and N. W. Simmonds, Cornell University, Ithaca, New York, grow more rapidly.

Apparently the growth stimulator present in the green fruit is a natural substance which

stimulates the banana to develop and ripen. Cocoanut milk contains a similar substance.

A Spanish patent that has been issued recently covers the rights to a process for soaking seeds for from one to five hours in a mixture of water which contains one part by weight of *opuntia* juice to two parts of very finely ground olive leaf.

The broad, oval flat leaves of this plant, with clusters of very sharp and long needles, are a familiar sight on the western prairies of the United States. It is generally known to Westerners as prickly-pear or cactus.

The fact that its juice contains a powerful growth stimulants which acts by speeding up cell multiplication in seeds and shoots was never before suspected. Yet, now, with patent rights issued, it may appear on the market soon.

So far, the tools of science have unlocked only a tiny portion of the treasure of better living that Mother Nature keeps safe. There remains, among the evils of poisons and drugs, a wealth of miracle plant substances awaiting discovery.—(From *The American Mercury*, New York, via *World Digest*, April 1957).

Cancer Producing Agent in Tobacco Found

The identification of a single carcinogen in tobacco smoke was reported by a Vietnamese scientist, director of the French National Centre of Scientific Research, University of Paris. The compound, 3-4-9-10 dibenzpyrene, was isolated by Dr. NguyenPhoc Buu Hoi. Although other dibenzpyrenes are known carcinogens, this is the first announcement that 3-4-9-10 dibenzpyrene has been found in tobacco smoke and apparently the first time the substance has been labelled a carcinogen (*cancer-producer*).

The University of Paris investigator said that all of the 4,000 mice injected with 0·5 mg. of the substances developed cancer—some of them in only 42 days. The dibenzpyrene, found in the tar formed by burning tobacco, liquefies readily as the smoke cools.—(*Ciba-Medical News*, 11-12-'56).

Ultra-Sonic Therapeutic Apparatus

The USSR Research Institute of Medical Equipment has worked out a model of a universal ultra-sonic therapeutic apparatus UZU-1, to treat the surface layers and internal organs by ultra-sonic waves.

The radiation of ultra-sonic energy may be obtained in any of the three frequencies—450, 900 and 2,500 kilohertz—uninterruptedly or in impulses. The maximum capacity of uninterrupted radiation is no less than 40 watts, and of impulses—from 60 to 80 watts per impulse. The radiation is dosed by a special dosimeter (ultra-sonic weights) attached to the apparatus. Patients suffering from diseases of the peripheral nervous system—radiculitis, sciatico-radiculitis, etc.—have been treated. After the first treatment the pain was alleviated, even in the cases of patients who had been treated for a long time by other methods without result. A limited number of such apparatuses for medical research institutions will shortly be made available.—(*N.V.S.U.*, 18-2-57).

BABIES

THAT ARE BORN TOO SOON CAN STILL BE MADE TO LIVE

KATHERYN WITHERSPOON

Could he live—this tiny scrap of humanity weighing less than two pounds?

BABY Robert Brown was only minutes old when he was wheeled through the door marked "Premature Nursery" in New York's Flower-Fifth Avenue Hospital.

"Poor little fellow," Dr. Robertson, the hospital's resident physician in pædiatrics, said, and shook his head. "He's too small to last more than a few hours."

"Don't be so sure, doctor." There was challenge in Nurse Carey's tone as she lifted the tiny infant from the portable incubator. "Isn't he cute? He must be about the smallest we've ever had."

She put him quickly in one of the nursery's Isolette incubators reserved for newborns under four pounds, placing him on the folded napkin, his body was too frail to wear.

"He's just a six-months' baby and so full of mucus he hasn't a chance," Dr. Robertson said. "The mother bore another preemie two years ago that lived only nine hours."

They looked down through the transparent plastic hood at the baby lying in the warm incubator like a little sparrow, all ribs and legs and arms. His head was finely shaped, with pointed chin and delicate nostrils, but his weazened skin gave him the wise look of a little old man.

"Here are his identification bracelets."

The doctor handed the blue and white bead bracelets to Nurse Carey. Ordinarily they were put on a newborn's wrists in the delivery room, but any unnecessary handling would endanger the life of a preemie of this size. Nurse Carey reached through the portholes and tucked them into a recess adjoining the mattress.

"We've never had a boy this tiny live, and only one girl," she said. "Our smallest boy was two five. I'd say this baby has about one chance in a hundred."

Baby Brown lay there quietly, his rib cage rising and falling as he breathed, exhausted from the shock of birth. His ribs beneath his thin skin resembled small ridges of fine sand along the seashore. His umbilical cord, tied off, hung to one side like a sea shell. His deep blue eyes were serene.

But as the nurse watched, he suddenly began breathing with difficulty and his colour changed rapidly to blue-black.

"He's got to be suctioned," she called. "Let me have the aspirator."

A student nurse brought her a delicate blown-glass oval, with a glass trap inside. A long glass cylinder extended from the top, with a rubber tube suspended from the bottom.

Nurse Carey reached through the incubator portholes and with skilled precision placed the rubber tubing in the baby's mouth. Then she put the upper glass cylinder in her own mouth and inhaled gently. The suction of her breath drew the mucus that was chocking the tiny throat to safety in the glass trap.

The student nurse watched intently.

Satisfied that Baby Brown was free of mucus temporarily, Nurse Carey took the aspirator to the sink and washed her hands......

Baby Brown was 22 hours old when Nurse Carey came on duty the next morning. She was early. She rushed eagerly to his incubator and looked down with relief at his little face and visibly breathing rib cage.

"I could hardly wait to see if he was still here," she said to the student on duty. "Every hour he lives, his chances get better."

"When do we feed him?" asked the student nurse.

"Not until he's about 96 hours old," Nurse Carey told her. "That's when the real trouble can start because you never know how they'll take it. The stomach fills up and creates pressure on the lungs. It can interfere with breathing, or cause mucus which they can't get out."

"Lucky they're born with enough food and water stored up in their bodies so they can last awhile without anything."

"See that?" Nurse Carey smiled. "He doesn't want to leave us."

Baby Brown was 46 hours old, and still going strong when the weighing began. It was a delicate process.

First, Nurse Carey placed the scales on top of the incubator. Then she took a rod with a hook on the top and one on the bottom. Attaching the top hook to the scales, she lowered the rod through the weighing hole in the top of the Isolette and attached the lower hook to the hammock that held the baby. Thus the baby would be weighed without leaving the warm safety of his incubator.

Intently, she watched the dial *move to one pound fourteen* ounces and stop.

"He would normally have lost about two ounces since birth," she figured. "That makes him around two pounds when born."

Then she placed a tape measure on the mattress beside him as he lay straight on his back. He measured 12 inches long......

Baby Brown was 95 hours old when preparations started for his first feeding. Dr. Robertson inserted in the baby's left nostril the smooth plastic tube used to *gavage* (stomach-tube) feed preemies under three pounds.

The baby became very much alive and struggled beneath Nurse Carey's restraining hands while the doctor worked.

"There, there," he soothed. "This doesn't hurt at all."

Actually the *gavage* tube is so comfortable that it can be left in place for a week at a time. Then it is removed and a clean tube placed in the preemie's chance of living, because it cuts down on handling. The tubes of hard rubber formerly used had to be inserted and removed with each feeding.

Feeding would begin after Baby Brown had become accustomed to the tube and could breathe easily with it.

Baby Brown was exactly 96 hours old when breakfast time came. Nurse Carey placed two cc.–60 drops–of lactose and water in a syringe fitted with an adapter over the open ends of the *gavage* tube. The liquid flowed automatically through the tube, descending at the rate the baby took it.

After the end of four minutes, all the liquid had passed from the syringe into the stomach. Baby Brown had had his first breakfast.

But he soon began to fuss and breathe harder. Then he turned blue-black. He had regurgitated. The feeding had passed into his lungs.

Nurse Carey suctioned him and told the student to telephone Dr. Robertson that he'd aspirated his feeding.

Dr. Robertson came immediately. "You're right," the said. "He has an aspiration pneumonia."

He prescribed penicillin for intramuscular injection twice daily, steam to be increased in his incubator, all feeding stopped for 24 hours.

As Nurse Carey injected the life-saving penicillin into the little body, Baby Brown cried.

Baby Brown was 111 hours old. It was midnight and all was quiet as Nurse Carey moved about the nursery watching the preemie sleeping peacefully.

She bent over Baby Brown's incubator. His rib cage had stopped moving. He was no longer breathing.

She snatched up the telephone and rang up Dr. Robertson, who appeared in a few minutes. He rushed to the Isolette where Baby Brown lay as in death, eyes staring open, and thrust the extra-long stethoscope through a porthole. "He's still living."

Nurse Carey moved aside and the doctor continued artificial respiration.

"Drop some mineral oil in his eyes," he told the nurse. "The air will dry them out, wide open like that, without any fluid from blinking. If he lives, we must save his sight."

As he moved the tiny legs in rhythm up to the chest and down, up and down again, Nurse Carey took a medicine dropper and carefully covered the eyes with the mineral oil.

"Give him three minims of caffein sodium benzoate to stimulate respiration, and increase his oxygen with a funnel," said Dr. Robertson.

Dr. Robertson listened again for the heart beat. All was silence.

"It's stopped beating," he announced. "There's nothing to lose now. I'm going to inject

adrenalin directly *into his* heart."

Nurse Carey brought the hypodermic and skilfully he plunged the needle into the deathlike body. Then he started working again, up and down with the tiny legs.

He listened once more, but still there was no sound. Brain damage would occur if the vital organ did not start pumping in a matter of seconds now.

He listened again. "I think I heard it!" he exclaimed and went back to the artificial respiration with renewed hope.

Doctor and nurse worked on, silent, efficient. Then Baby Brown made a little gasp, the first intake of air of his own in at least 35 minutes.

"He's breathing," Nurse Carey muttered tensely, trying not to cry.

*A few minutes more of artifi*cial respiration and the little rib cage was moving again under its own power.

"I could have pronounced him dead," said Dr. Robertson. "But I felt something was still there. Technically, he *was* dead for about three minutes. If he survives this crisis, I think he'll make it......"

Baby Brown was three months old when Nurse Carey placed him in his mother's arms for the first time. He weighed five and a half pounds, he was 18 inches long—and he was dressed to go home.

"Use a slow nipple on him," Nurse Carey told his mother. "He eats well, but he needs a *lot of* sucking."

To Baby Brown she said simply: "Goodbye, Robert. Don't forget me too soon."—(*Coronet*, Chicago via *W.D.*).

Radio Set Worked by Paraffin Lamp

A Dutch firm has produced a prototype radio set which is powered by a simple paraffin lamp. The heat from the glass chimney of the lamp is converted into electrical energy by a system of thermopiles ("heat batteries") and transistors.

The volume of sound produced is sufficient for the set to operate almost anywhere in the world, and it will prove most useful in remote areas where there is no local source of electricity. Similar experiments are going on in other countries.

Electronic "Eye" on the Railways

The Southern Pacific Railway, U.S.A., has installed an electronic computer to keep an "eye" on the distribution of empty wagons. It will handle the records of 70,000 individual vehicles, assess the efficiency with which they are used, and advise on distribution in accordance with trends it forecasts for itself. Eight thousand miles of track will come under its jurisdiction.

At the same time, America's second largest railway, the New York Central, has added facilities to its Cleveland laboratories for its scientists to study the application of nuclear energy to the railways. For the moment they are more concerned with nuclear batteries for signals and such-like developments, rather than with thoughts of an atomic-powered train, which has largely been discounted for the foreseeable future.—(*W.D.*, July '57).

Anti-Anxiety Drugs Causing Anxiety

They may Cause Ulcers and Colitis

THE U.S. Food and Drug Administration has advised drug manufacturers and physicians to cut down the dosage of the so-called tranquillizing and "happiness" pills.

An agency spokesman said that the drug "are very valuable if used conservatively." But Dr. Ralph Smith, Chief of the New Drug Branch of the Agency's Bureau of Medicine, said the current tranquillizing drugs may, if used to excess, have an adverse effect on the mental state of patients and cause peptic ulcers or ulcerative colitis.

The Agency's warning was contained in a letter to drug manufacturers, signed by Dr. Smith, urging them to change their literature and labels, and reduce the dosage they recommend to physicians.

The letter referred specifically to drugs made from an alkaloid called reserpine, a derivative of *Rauwolfia serpentina,* sold only by prescription. Their use is aimed at giving patients a feeling of less anxiety.

The Agency spokesman said that excess of the drugs induces depression. There have been some depressive cases so severe, he said, that they led to suicidal attempts, some of them successful!

The Agency said that, when reserpine was introduced, "the available evidence suggested that it was a drug of very low toxicity, with no contra-indications, and with a wide range of safe dosage. As the drug has been used more extensively, it has become apparent that reserpine is not the innocuous substance it was first thought to be, that there are contra-indications, and that the safe level for long-term outpatient maintenance is lower than the recommended dosage schedule".—(*Health for All,* October 1956).

Your Complexion and Your Diet

If you would have less acne, fewer pimples and skin eruptions, avoid fried foods, chocolate, oily nuts, rich strong cheeses, gravies, fat-rich salad dressings, cakes and biscuits, and so give your fat (sebaceous) glands the chance to recuperate. But do eat plenty of fruit, salads, vegetables, soups, cottage cheese, whole cereals and whole-wheat breads, milk, and pure water. Then with the help of sunlight, fresh air, and exercise, your skin will clear itself.—(*Good Health,* London, June 1957).

Duodenal Ulcer

First learn to relax emotionally; face and make decisions on mental problems and so break the nerve tension. Then start healthful living. Drop stimulants—tobacco, coffee, alcohol, strong tea, richly spiced dishes, fatty and fried foods, and diet simply on baked dishes, gruels, vitamin B-rich foods, milk, and soups. Give your body the air, light, and exercise it needs out of doors, and learn to breathe fully, deeply, and easily.—(*Good Health,* London, June 1957)

THE PROBLEM OF MENTAL ILLNESS

When the Freudian theories were first publicized there were many people who felt that the key had been provided for the unlocking of doors and solving the problems of mental illness. They argued that here, at last, was an approach which made sense to the ordinary individual and provided the adviser with a technique that could unravel the tangled threads of the unconscious frustrations and inhibitions and the various "complexes" that disturb the *psyche* of the harassed individual and lead to the mental breakdowns so common in our own times. But, are we quite so sure about it to-day?

It is true that the Freudian theories had the most far-reaching effects upon the social and cultural aspects of the last few decades. In literature, in art, and, indeed, throughout the whole social fabric of the community we see the effects of the impact of these theories. To-day the main changes which enliven conversation of our times as against that of pre-Freudian days we owe to the inculcation into the language of the new terms and concepts.

Yet, so far as mental illness is concerned, that there is no rosy picture to be painted. Reports of the annual meeting of the American Psychiatric Association, published in the *New York Times*, May 2, 1956, show that some of the methods of treating mental complaints came in for strong criticism, Dr. P. Bailey, Director of the Illinois State Psychopathic Institute, was brutally frank in his lecture. "Revolutions bring change" he said "but not necessarily progress." He then went on to list areas in present-day psychiatry where he felt rethinking was necessary. Psychosurgery he described as having swept across the country "leaving hecatombs of mutilated frontal lobes benind it." The use of shock therapy he characterized as "blind empirical treatment," saying that no one knew when it worked or how it worked, and declared that it had a "punitive aspect." "Deep therapy," he said, "was just as dangerous as deep surgery, bringing people to the abyss, and then hoping, that the patient would not fall in." The tranquillizing drugs came in for stricture; "because of their deleterious effects they cannot be used indefinitely."

Having thus demolished much of the present-day treatment for mental illness, Dr. Bailey allowed himself to see a ray of hope for the future in an approach to the problem on the physical plane in which the neurologist would be aided by the nutritionist, and in this outlook he was supported by a Professor of Chemistry, a Nobel prize-winner of 1946, Dr. Pauling, who saw the possible answer to the problem in an imbalance of bodily and nutritional elements.—(*Health for All*, October 1956).

Rh FACTOR

THE Rh factor is a chemical substance present in the red blood cells of most people. It was named "Rh" because it is related to a substance found in the red cells of Rhesus monkeys. When an individual's red cells contain this Rh factor, he is called "Rh positive;" when they do not, he is "Rh negative." There is nothing basically better or worse about either condition. It is just a matter of a normal inherited contrast, like dark eyes or light.

So much has been written about the Rh factor since it was discovered in 1940, and about the serious condition sometimes caused when an Rh-negative mother has an Rh-positive husband, that many mothers-to-be do a lot of unnecessary worrying. Complications that are due to the Rh factor, however, are rare (about one case in every 200 full term pregnancies). When they do occur, they are not always severe. Methods of counteracting them are now well-known, and research is in progress on ways of preventing them entirely.

When both parents are Rh negative, there is no problem. When the father is Rh positive and the mother Rh negative, a rare type of severe anæmia (technically known as "erythroblastosis fœtalis" or "hæmolytic disease of the newborn"), about which many mothers have a lot of unnecessary concern, is sometimes found in the Rh-positive infant. Jaundice and enlargement of the baby's spleen and liver at birth, or shortly thereafter, are other possible results. The mother is rarely affected.

At first it was felt that perhaps couples interested in marrying should have their blood tested to avoid marrying the "wrong type." However, further research has shown that even among the estimated 13 per cent of married couples who share this combination, the chances of any difficulty are only 1 in 26. Besides, most Rh-negative women whose husbands are Rh-positive can have two or more perfectly healthy Rh-positive babies before any trouble starts.

There is about an even chance that the child of an Rh-negative woman and an Rh-positive man will be Rh negative like his mother, in which case there is no trouble. If the unborn baby is Rh positive, however, a small amount of Rh substance entering the mother's blood stream will touch off a reaction. Her negative blood will start manufacturing antibodies to fight off this foreign Rh-positive factor. These antibodies, passing into the baby's circulation, will keep up the fight and destroy the baby's Rh-positive red cells. This, briefly, is what causes the difficulty for the baby

A special blood test shows whether a pregnant woman is Rh positive or Rh negative. If she is Rh negative, her husband's blood is tested too. If he proves Rh positive, the mother's blood is tested about three times in the course of the

pregnancy for the presence of antibodies. It may be that none are found, or that they begin to appear only late in the pregnancy. Even when they are present, it does not necessarily mean the baby will be affected. But it is a signal to the doctor to be ready to deal with the situation.

If at birth the baby is found to be affected, he is given transfusions of Rh-negative blood. This Rh-negative blood remains unharmed by the antibodies produced by his mother against his Rh-positive factor, thus correcting his anæmia and supplying his organs and tissues with the oxygen they need. One or two such transfusions may be enough. In severely affected infants a "replacement transfusion" draws off almost all the baby's own blood, replacing it with red cells able to survive and carry on their functions in the infant's circulation.

Once an Rh-negative person has been sensitized—*i.e.*, has started to produce antibodies, either by bearing an Rh-positive child or by having a transfusion of Rh-positive blood—the condition persists and may become progressively stronger with each succeeding pregnancy. This cumulative effect explains why an Rh-negative mother can produce two or more perfectly healthy Rh-positive babies and then have difficulty with a later one. If she has already been sensitized by a transfusion of the wrong kind of blood, even the first baby may be affected. This is the reason for extreme caution in the matter of transfusions for Rh-negative infants, girls, or young women.

Further refinement studies of blood types and their reactions has brought out the fact that Rh factor includes a number of substances that can be distinguished in making blood tests. Of these substances, it appears that only one of the four Rh-positive types involves the danger of producing the adverse effects. This is the Rh type. When tests are being made it is well to get the additional information as to *which* Rh factor is present in a positive individual. —(*Child Care Encyclopaedia*).

Tarts in a Twinkle

A British dough-mixing machine, which is claimed to be revolutionary, went on display for the first time recently at a Paris food industry exhibition.

The makers claimed that the mixer, which works with compressed air, can whip a light aerated mixture for sponge cakes, meringues, and so on in three to five minutes, compared to about half an hour by the normal process.

Tap it As You Tour

The Smith Corona Typewriter Company in United States has introduced what it claims to be the world's first electric portable typewriter.

The Typewriter will sell for about £ 65 about twice the cost of the ordinary portables. It weighs some 19 lb., about 6 lb. more than the average-size conventional typewriter.

Fly Production in Treated and Untreated Privies

For reasons as yet unknown, chemical treatment of privies with Dieldrin, BHC, and Chlordane increase the breeding of Musca domestica, according to controlled studies at Savannah, Ga.

PRIOR to 1951 human excrement was not considered to be an important breeding medium for houseflies. However, since 1951 there has been considerable evidence of copious housefly breeding in human fæces. Studies in the lower Rio Grande Valley, Tex., and in Phœnix, Ariz., and Charleston, W. Va., have indicated this intensive breeding to be associated principally with the use of dieldrin as a residual or as a larvicidal treatment in privies.

In 1953 the Technical Development Laboratories of the Communicable Disease Central Public Health Service, undertook a long-range investigation in Southeastern Georgia, near Savannah, to study this paradox of increased housefly production from treated privies. During 1953 the study of fly emergence from 100 untreated privies (10 in each of 10 areas) substantiated the pre-1951 observations that human excrement as a breeding medium normally contributed little to the overall housefly population. In 1954 the study plant was designed to determine what effect chemical treatment of privies with certain chlorinated hydrocarbon insecticides would exert upon housefly and other fly production.

During late March and early April 1954, near Savannah, Ga., 30 privies were treated with dieldrin, 10 privies with DDT, and 20 privies remained untreated. Within 4 weeks the dieldrin-treated privies showed a sharp increase in housefly production. Average monthly indexes per privy were 193, 254, 1,374, 1,204, and 1,946 specimens for May through September, respectively. In contrast, average monthly indexes for the same period for DDT-treated and untreated privies were 15, 7, 103, 14, and 36, and 3, 13, 5, 16, and 10 specimens, respectively. Nine privies within a 3 to 4-block area, treated in groups of 3 with BHC, dieldrin, or chlordane, also showed increased housefly production with a low prevalence persisting in 3 adjacent untreated privies. Both Aldrin-treated privies and dieldrin-treated privies with only the riser walls or the pit contents sprayed likewise produced increased housefly breeding. A total of 273,046 flies, representing 123 species, 76 genera, and 36 families, were trapped in all privies.

The low level of housefly production in untreated privies and the increased breeding of this species in privies treated with BHC, Chlordane, Aldrin, and Dieldrin indicate that the use of these chlorinated hydrocarbon insecticides for housefly control in privies should be avoided.—(*Public Health Reports, U.S.A.*, August 1956).

[NOTE :—The emergence of DDT resistant mosquitoes is also becoming a Public Health problem in S. E. Asian countries. Ed. HEALTH].

NEW FOODS FOR THE BABY

AT four or five months a baby is usually ready to start on his first solid food; some even begin at two or three months. Since most babies love the taste of fruit, it is usually easier to start with apple sauce or mashed ripe bananas rather than with cereal. Apple sauce can be served directly from the can or jar of prepared baby food heated in a pan of warm water. Banana can be softened and warmed slightly by mixing it with a little hot milk.

Most babies take to solid food more readily if it is offered just before the midmorning bottle, when they are hungry but not too tired. Some babies, however, may insist on part of the bottle or even the whole bottle before they are willing to try something new. When eating solid food, a baby is most comfortable in a semi-sitting position, supported by his mother's arm. The mother uses a small spoon, fills it only half full, and places the food on the middle of the baby's tongue. If it is too far forward, he may spit it out; if too far back, he may gag on it.

For the first day or so, until he gets used to this new way of eating, a baby needs only a few tastes of apple sauce or banana. Little by little he can be offered more, and by the end of a week or so he will probably be enthusiastic about it. When a baby is taking these fruits easily, cereal can be introduced. Here, too, a few tiny spoonfuls are enough to begin with; the amount can be increased gradually. Most doctors suggest giving cereal in the morning, but many mothers prefer to give it at the 6 P.M. feeding, for it tends to fill the baby up and help him sleep through the night.

After a baby is taking applesauce, mashed bananas, and cereal as a matter of course, new foods can be added little by little. A large variety of strained fruits is available in cans and jars. Since vegetables are generally less popular, most doctors advise starting them only after a baby learns to take fruit and cereal well. A mother can start with any one of the many vegetables available in jars and cans, but if she is wise she will be ready to shift to another kind if the baby keeps spitting it out or turning away from the spoon. If he seems uninterested but doesn't refuse it, continuing the same vegetable for a few days without increasing the amouut gives him a chance to become familiar with it; then he may come to like it better. Vegetables that seem to be actively disliked can be forgotten for a month or more and then offered again, when they often receive a warmer welcome.

Eggs and meat, which are added at about four to six months, are usually accepted at once. If a baby dislikes one or two kinds of meat or eggs prepared in a certain way, they can be left out of his diet for a while. He is likely to take to them when he is somewhat older.

Sometime between eight months and one year, babies can get used to chopped and lumpy food. It is good for them to do so. If they continue having only strained food much beyond a year, it becomes harder for them to change to unstrained food. Some babies can 'switch easily from baby food to 'junior food. For others, mothers may have to make the change so gradual that it is scarcely noticed. This is especially true with potatoes, for many babies tend to gag on them. By the time they are 18 months or two years old, most babies can eat lumpy potatoes if given slowly. By eight to 11 months, most babies can eat chopped vegetables, and bits of meat.

When a child is old enough to eat some meals with his parents, yet not old enough for adult meals, he can get acquainted with new things by having small samples. If these are presented as something of a treat, a child is more likely to remain curious and outgoing toward new foods. That is, if he is *allowed* rather than *urged* to sample cauliflower, tomatoes, asparagus, sweetbreads, kidneys, meat loaf, liver-wurst, and other new things, his tastes are more likely to broaden at their own natural speed.

The things to remember are: (1) go slowly in adding new foods — starting with small amounts, adding just one new food at a time until it is thoroughly familiar; (2) try to give a child a wide variety of food while he is still young, yet without forcing anything on him; (3) for every important food there is a substitute containing the same values. Therefore, it doesn't matter if achild dislikes a few foods so long as he has a positive, pleasant feeling toward food and toward eating in general.—(*The Encyclopaedia of Child Care And Guidance*).

Soviet-Made Astronomical Clock

In use in most astronomical observatories of the world are the short Pendulum clocks made by the Synchronom firm in Britain. For almost 45 years the Shortt clocks were considered the most accurate, as the variations of their escapement are off only two or three-thousands of a second in 24 hours. Scientists, however, have worked persistently to make the pendulum clocks even more accurate.

F. Fedchenko, of the Kharkov Weights and Measures Institute was taken up with the idea of developing a more accurate astronomical clock than those in use. Utilizing the experience gained in the insritute he invented a special device—a three-spring suspension—to which the pendulum is attached, and due to this suspension and the employment of a mechanism giving the pedulum impulses once every sixty seconds lasting no more than ·01 seconds, and the regularity of the impulses a high stability has been reached in the variations of the pendulum.

In the Soviet astronomic clock, the AChF-1, the variations of the escapement are off one thousandth of a second in 24 hours.—(*N.V.S.U. Bulletin*).

MYSTERY ORGANS

S. B. WHITE HEAD, D.Sc. (Lond.)

DESPITE the tremendous strides made in recent years toward a fuller understanding of the human body and its working, there is still much to mystify us. No-one can yet define the simplest process of thought in terms of physiology. No one is yet ready to show how the divine spirit can be harnessed to work and manifest itself through the finite human being. No-one explains the mechanism of the soil.

Many authorities take the view that the human body, far from being perfect, is an unfinished machine, that parts of it are redundant, and other parts have still to be fully developed by the slow processes of evolution. It is true that the perfectly integrated and healthy person is rare. It is also wonderful that we can lop pieces off, take organs away, and suffer innumerable sub- or abnormal conditions, and yet live!

Nevertheless, to suggest that the human body has been put together haphazardly is more of a reflection upon our own intelligence and lack of knowledge, than upon our Creator.

The mysterious thymus.—One of the organs we have difficulty in understanding is the thymus gland. It is one of the organs of the endocrine system, and undoubtedly plays a part in the elaboration and secretion of those almost ethereal substances, the hormones, which have so much to do with physical and emotional development and mental stability. Apparently the physical effects of the thymus hormone are difficult to chart. There are some indications that its primary importance is toward emotional well-being.

The thymus consists of two lateral lobes, about 2 inches long, 1½ inches wide, less than ½ inch thick, and weighing about ½ ounce. It lies, at birth, just above the hollow at the end of the breast bone, or sternum, then grows to its full size at the end of the second year. Later, it begins to atrophy, moving slightly up behind the upper part of the breast bone, and physiologists are apt to deduce from this that the thymus is of little importance.

Nevertheless, the gland is active in the early years, and there are some grounds for believing that physically, it operates to give a baby a tight hold on life—everyone knows the surprising strength with which a baby can grasp an outstretched adult finger—and in some way enables the body to "lay hold on life" until such functions as digestion and locomotion develop, and independent living becomes possible.

Some authorities also see in the working of the thymus gland the mechanism of faith, morality, and ideality. Its function in early life, so it is held, enables a baby to accept the conditions into which it is born, with complete confidence and even joy. As proof, they point out that

with the atrophy of the gland, our perplexities grow, our assurance diminishes, and we lose some of our tenacity and endeavour.

The tiny pineal.—Another gland of mystery is the tiny pineal—a reddish, cone-shaped bit of tissue, about the size of a grain of barley, placed in the midst of the brain field in the head, about an inch below the crown. It has been dismissed as apparently unimportant, but on the other hand, it has been described as the most important gland of the whole endocrine system.

As long ago as 1728, Descartes described the pineal gland as the seat of the mind, and others see it as the third or psychic eye! A modern hypothesis holds it to be an organ that enables us to distinguish colours, being indispensable to the development of that state we term the mind, and also to the illumination and development of brain cells. By this hypothesis, the pineal gland becomes, when functioning, the organ that raises man above the beasts, giving him reason and a mental perception and control of his spiritual, intellectual, and physical propensities.

Apparently, however, no-one has yet succeeded in isolating a pineal hormone or in proving its functions. It is certain that somewhere in the human body a mechanism exists for the unity of man's spiritual aspirations and intellectual perceptions, and the possibility of the pineal gland playing this role cannot be ruled out.

Organs of faith and light?—Those who have studied the psychological implications, rather than the physical, of the thymus gland suggest that it may be the means whereby we can exercise a sense of faith, while the pineal affects mental light and perception. Mankind is certainly in need of these qualities today.

Our survey of the endocrine glands is now more or less complete. It is clear that they, together, form a system, and by their activity fulfil two purposes: the physical one of providing the substances (hormones) which make the growth, development, and regeneration of the cells of the body possible; and the psychological or mental one of charging and activating the brain cells.

They are not normally directly influenced by what we do, but they are vitally affected indirectly.

They are, for instance, dependent on our breathing, like every organ, for their life impetus, but must take their oxygen from the blood. They must also receive their raw materials for the manufacture of hormones from food elements digested and assimilated in the bloodstream. Thirdly, they are activated, to a considerable degree, by nerve impulses.

Consequently, the perfecting of the endocrine system, like the rest of the body, depends upon the use we make of life resources in breathing, diet, and the exercise of our faculties.—(*Good Health*, London, June 1957).

Post-Prandial Pleasant Topics

From "*After-Dinner*" by OSWALD LEWIS

Irishmen

An Irishman was being tried for a clear case of murder but he had bribed a friend on the jury to stand out for a verdict of manslaughter. The jury were out for five hours but finally brought in the required verdict. The prisoner almost wept for joy as he thanked his friend. 'Ay,' said the friend, 'ye may well thank me, oi nearly had me head bruk. There was ileven of 'em for acquin' ye, but I stuck out for manslaughter'.

* * *

A tourist caught in a storm took shelter in an Irishman's cottage, the roof of which leaked very badly. The owner of the cottage, when asked why he did not repair the roof, replied 'Well, ye see, yer honour, when it's raining I can't do it, and when it is clear it don't need doing, so I just naturally leave it alone'.—*(This is what most landlords do even in Madras.*—Ed. HEALTH).

Juries

Mr. Justice Gould was trying a case at York, and when he had proceeded for about two hours he observed 'Here are only eleven jurymen in the box; where is the twelfth?' 'Please you, my lord,' said one of the eleven, 'he has gone away about some other business, but he has left his verdict with me'—(*Anecdotes of Bench and Bar*: A. H. Engelbach).

Law

If a man stay away from his wife for seven years, the law presumes the separation to have killed him; yet according to our daily experience, it might well prolong his life.—(Mr. Justice Darling).

Lawyers

A man was prosecuted for theft and pleaded guilty. The judge said he ought to be represented by counsel and accordingly a barrister was found to undertake the case. The first thing the barrister did was to withdraw the plea of "*guilty*" and substitute a plea of "*not guilty*". The evidence was conflicting and eventually the jury brought in a verdict of not guilty. Whereupon the judge delivered judgment in these words: "Prisoner at the bar! on your own confession you are a thief; in the opinion of the jury you are a liar; you may go".

* * *

A negro showing a stranger round New York pointed to a courthouse and said 'That am the place where they dispense with justice!.—(*The Tatler*).

* * *

An older barrister said 'When I was young I lost a good many cases which I ought to have won, and now that I have grown old and experienced I win a good many cases which I ought to lose; so, on the whole, justice has been done'.—(*The American Commonwealth*: James Bryce).

If there were no bad people there would be no good lawyers.—(*The Old Curiosity Shop*: Charles Dickens).

* *

He that is his own lawyer has a fool for his client.—(*Proverb*).

Lectures

A lecture has been well described as the process whereby the notes of the teacher become the notes of the student without passing through the mind of either.—(*How to Read a Book*: Mortimer J. Adler).

* * *

Hunter, the Glasgow teacher of medicine, once had only one student to attend his lecture. He sent the attendant to bring in the skeleton, in order that he might begin his address with 'Gentlemen'.—(*Book of Quotations*, Viscount Samuel).

Letters

A synonym is a word you can use when you don't know how to spell the one you first thought of.—(*The Laughter Lover's Vade Mecum*).

* * *

Do right and fear no man; don't write and fear no woman.—(*The Table in a Roar*: James Ferguson).

Libraries

Libraries are the collective memory of mankind.—*(Viscount Samuel)*.

Life

You will never begin to understand Nature until you see clearly that every life is dominated by two supreme anxieties which push aside all other concerns—*viz.*, to eat, and not to be eaten.—(*Concerning Mammals*: E. H.)

Literature

What is written without effort is in general read without pleasure.—(*Dr. Johnson*).

Lords (House of)

The House of Lords is the flywheel of the constitution.—(*Platform Speaker's Book of Quotations*: Professor Bonamy Price).

Inventions

The history of invention is the history of applied idleness.—(*Essays and Literary Studies*: Stephen Leacock).

* * *

The inventor of a mousetrap worried President Lincoln for a testimonial to assist its sale. The President finally sent him the following:

'For the sort of people who want this sort of thing, this is the sort of thing that sort of people will want'.

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